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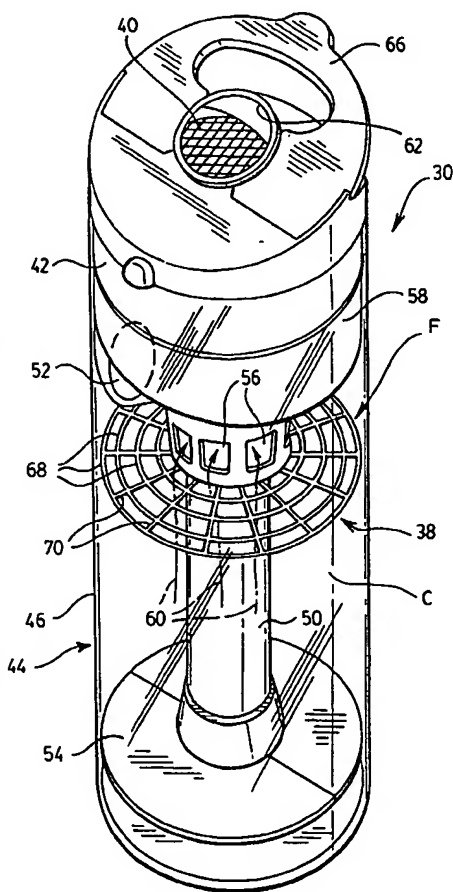
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[Continued on next page]

(54) Title: **VACUUM CLEANER INCLUDING A CYCLONE SEPARATOR**



(57) Abstract: A vacuum cleaner (20) that includes a cyclone separator (38) has a coarse filter (F) disposed in the path of air flowing towards the outlet of the cyclone separator, for holding back hair that would otherwise tend to clog the vacuum cleaner (20), while minimizing impedance to air flow. In a preferred embodiment, the coarse filter (F) comprises a disc-shaped lattice structure of barrier elements (68) that are arranged to "catch" the animal hair.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A47L9/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 99 22874 A (B.H.R.GROUPLTD.) 14 May 1999 (1999-05-14) column 3, line 3 -column 6, line 20; claims 1,3,6; figures 1,2,5-8	1,2,4,8, 11,13-15
A	----	3,9
Y	EP 0 489 565 A (NOTETRY LTD) 10 June 1992 (1992-06-10) column 3, line 6 -column 11, line 9; figures 1,2,2B,7,91-3	1,2,4,8, 11,13-15
A	----	1,8,10
	US 4 643 748 A (DYSON,J.) 17 February 1987 (1987-02-17) cited in the application column 1, line 64 -column 4, line 34; claims 1,15; figures 1,3 ----- -/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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& document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Int'l Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 006, no. 054 (C-097), 9 Apr11 1982 (1982-04-09) & JP 56 166955 A (OKAJIMA TADASHI), 22 December 1981 (1981-12-22) abstract ---	1, 14, 15
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) & JP 11 056718 A (IDE HIROYUKI; ISOTANI KEIICHI), 2 March 1999 (1999-03-02) abstract -----	1, 7, 8

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int — onal Application No

PCT/CA 02/00421

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9922874	A	14-05-1999	AU 9755698 A EP 1157650 A2 EP 1028813 A1 WO 9922874 A1 GB 2330786 A ,B	24-05-1999 28-11-2001 23-08-2000 14-05-1999 05-05-1999
EP 489565	A	10-06-1992	US 5078761 A AT 123639 T AT 154216 T AU 637272 B2 AU 8819491 A CA 2056161 A1 DE 69110424 D1 DE 69110424 T2 DE 69126546 D1 DE 69126546 T2 EP 0489565 A1 EP 0636338 A2 ES 2105467 T3 HK 1001469 A1 HK 1000956 A1 JP 1948863 C JP 5176871 A JP 6085753 B SG 43964 A1	07-01-1992 15-06-1995 15-06-1997 20-05-1993 11-06-1992 04-06-1992 20-07-1995 01-02-1996 17-07-1997 29-01-1998 10-06-1992 01-02-1995 16-10-1997 19-06-1998 15-05-1998 10-07-1995 20-07-1993 02-11-1994 14-11-1997
US 4643748	A	17-02-1987	CA 1238869 A1	05-07-1988
JP 56166955	A	22-12-1981	JP 1173980 C JP 58005686 B	28-10-1983 01-02-1983
JP 11056718	A	02-03-1999	NONE	